DOCUMENT RESUME

ED 030 197 EA 002 317

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An Evaluation of the Model for Educational Improvement as an Analytical Tool for Describing the Change Process. Report from the Project on Models for Effecting Planned Educational Change.

Wisconsin Univ., Madison. Research and Development Center for Cognitive Learning.
Spons Agency-Office of Education (DHEW), Washington, D.C. Bureau of Research.
Report No-CN-C-03, Theor-Pap-18
Pub Date Mar 69
Contract-OEC-5-10-154
Note-23p.
EDRS Price MF-$0.25 HC-$1.25
Descriptors-Adoption (Ideas), Change Agents, Data Analysis, Diffusion, *Educational Change, *Educational Improvement, *Educational Innovation, Educational Practice, Educational Research, *Evaluation, *Models, School Systems
Identifiers-*Model for Educational Improvement

This paper describes the Model for Education Improvement and reports on an informal test of the hypothesis that the model is a valid description of the educational change process within a school system. The model combines well known elements of the change process--notions of external and internal inputs, the adoption process, and relating the adoption process to the entire system--in a new configuration. The structural design of the model, developed through observation of three Wisconsin school systems over 2 years, permits a progressive flow of ideas in the process of change and includes an improvement module. Data used to test the model's validity were provided through tape recordings and observations of meetings of change-agent teams operating in three school systems. Results indicate that the model is a suitable instrument for describing developments of the change process in school systems. Further indications are that the model has potential for serving as a prototype for decision makers to objectively observe the efficiency of improvement processes operating in their respective school systems. (Author/TT)

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ED030197

Theoretical Paper No. 18

AN EVALUATION OF THE MODEL FOR EDUCATIONAL IMPROVEMENT AS AN ANALYTICAL TOOL FOR DESCRIBING THE CHANGE PROCESS

By Burton W. Kreitlow and Teresa MacNeil

Report from the Project on Models for
Effecting Planned Educational Change

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March 1969

The research reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education, and Welfare, under the provisions of the Cooperative Research Program. The opinions expressed in this publication do not necessarily reflect the position or policy of the Office of Education and no official endorsement by the Office of Education should be inferred.

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This Theoretical Paper is from the Models for Effecting Planned Educational Change Project in Program 3. General objectives of the Program are to develop and test organizations that facilitate research and development activities in the schools and to develop and test the effectiveness of the means whereby schools select, introduce, and utilize the results of research and development. Contributing to these Program objectives, the main objective of the Planned Change Project is to develop and test system wide mechanisms which local school systems can employ in utilizing knowledge and innovations of the type generated by the Center. Change-agent teams have been organized in area school systems and their effectiveness is being evaluated.

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ABSTRACT

The Model for Educational Improvement is a construct which combines some well-known elements of the change process in a new configuration. Notions of external and internal inputs, of the adoption process, and of relating the adoption process to an entire system are drawn from the works of social scientists in the fields of agriculture and education. The structural design of the Model permits a progressive flow of ideas in the process of change and includes, among other new features, an improvement module. This design was developed through observation of improvement processes operating in three Wisconsin school systems over a period of two years.

This paper describes the structure of the Model for Educational Improvement. It reports on an informal test of the hypothesis that the Model is a valid description of the change process within a school system. Data for this test are provided through tape recordings and occasional observations of meetings of change-agent teams operating in three school systems.

The Model for Educational Improvement appears to be a suitable instrument for describing developments of the change process in school systems. It has potential for serving as a prototype for decision-makers to objectively observe the efficiency of improvement processes operating in their respective school systems.

I
PURPOSE

The Planned Change Project of the R & D Center employs a structure designed to bring about systematic planned change in school systems. The focal point of that structure is the change-agent team. The project design calls for the formation of change-agent teams and describes the functions such teams might serve in three selected Wisconsin school systems. (Details of the change-agent model and prospects for its application are described by Goodson and Hammes.)[1]

Within the boundaries of the change-agent experiment another model is being tested. It is the Model for Educational Improvement, constructed to detect information relative to change processes operating within change-agent committee discussions. It is designed to provide a way of coping with the challenge posed by such questions as:

1. By what process do change-agent teams identify necessary changes?
2. By what process do they decide to institute changes?
3. By what process do they implement changes?

These questions suggest the possibility of determining a developmental pattern of processes within the overall change process. Charting such patterns would detect the presence (or absence) of a systematic progression of operations common to groups or persons (e.g., change-agent teams) as they move from problem identification to solution and implementation. It is the purpose of this investigation to develop and test a model having the potential to serve as a valid description of the change (improvement) process in education.

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[1] Max R. Goodson and Richard Hammes, "A Team Designed for School System Changing," Theoretical Paper No. 11 (Madison: Wisconsin R & D Center for Cognitive Learning, 1968).

II
DEVELOPING THE MODEL

The Model for Educational Improvement is, in part, the result of longitudinal observation in schools of ten Wisconsin communities from 1949 to 1967. Two other sources of the Model are (1) the careful examination of discussions of committees for change within three experimental and two control systems from 1966 to 1969 and (2) analyses of a variety of models for change developed by social scientists in both agriculture and education:

a. Classification Schema of Processes Related to and Necessary for Change in Education, David L. Clark and Egon G. Guba;[2]
b. The Supply- and Demand-Activated Extension Systems, R. L. Bruce;[3]
c. The Periods and Conditions of Community Change, B. W. Kreitlow.[4]

I. THE GUBA-CLARK SCHEMA

Basic to this schema are the notions of the diffusion process described by Beal and Bohlen[5] and similar notions of the adoption process as described by Rogers.[6] The diffusion process refers to the distribution of an idea from its invention source to the point of adoption. The adoption process refers to the mental stages through which the potential adopter passes from the point where he becomes aware of a new idea until he adopts or fails to adopt it. The adoption process then is an individual matter and constitutes the final stage in the diffusion of an idea. Guba and Clark made an important transition from the notion of the adoption process as it applies to an individual, to adoption as it applies to organizations or groups.

The chief concern of Guba and Clark is with the problem of bringing about change in education systems. They view the necessity of bridging the gap between theory and action as a major concern. They maintain that most theoretical outcomes in educational research are not implemented in practice because attention is not given to the intervening functions and processes necessary to transform an "invention" into an innovation culminating in practice. They attend to questions of how to connect an invention to a system in a way that will bring about change in the system.

The schema proposed by Guba and Clark (Figure 1) is designed to include a continuum of functions which must occur if the theory–practice gap is to be bridged. It is important to note that the authors do not require these functions to necessarily occur in the order presented.

Four major activities are delineated:

1. Research, where the essential activities are inquiry and experimentation. Guba

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[2] David L. Clark and Egon G. Guba. "Understanding Social Change." SEC Newsletter, I, 2 (1965), 1-4.

[3] R. L. Bruce, "Supply- and Demand-Activated Extension System" (Ithaca: Cornell University, 1964).

[4] Burton W. Kreitlow. "Periods and Conditions of Community Change," Leadership for Action in Rural Communities, eds. Kreitlow, Aitan, and Torrence (Danville, Illinois: The Interstate Printers and Publishers, 1960), pp. 12-13.

[5] George Beal and Joseph Bohlen, "The Diffusion Process" (Ames: Iowa Agricultural Extension Service Special Report 18, 1958).

[6] Everett M. Rogers, Diffusion of Innovations. (New York: The Free Press of Glencoe, 1962), pp. 81-86.

Figure 1. A Classification Schema of Processes Related to and Necessary for Change in Education

Clark, David L., and Guba, Egon G. "Understanding Social Change" SEC Newsletter, I, 2(1965), 1-4.

	RESEARCH	DEVELOPMENT		DIFFUSION		ADOPTION		
		INVENTION	DESIGN	DISSEMINATION	DEMONSTRATION	TRIAL	INSTALLATION	INSTITUTIONALIZATION
OBJECTIVE	To advance knowledge	To formulate a new solution to an operating problem or to a class of operating problems, i.e., to innovate	To order and to systematize the components of the invented solution; to construct an innovation package for institutional use, i.e, to engineer	To create widespread awareness of the invention among practitioners, i.e., to inform	To afford an opportunity to examine and assess operating qualities of the invention, i.e., to build conviction	To build familiarity with the invention and provide a basis for assessing the quality, value, fit, and utility of the invention in a particular institution, i.e., to test	To fit the characteristics of the invention to the characteristics of the adopting institution, i.e., to operationalize	To assimilate the invention as an integral and accepted component of the system, i.e., to establish

Figure 1. Continued

	RESEARCH	DEVELOPMENT		DIFFUSION		ADOPTION		
		INVENTION	DESIGN	DISSEMINATION	DEMONSTRATION	TRIAL	INSTALLATION	INSTITUTIONALIZATION
CRITERIA	Validity (internal and external)	Face Validity (appropriateness) --- Estimated Viability --- Impact (relative contribution)	Institutional Feasibility --- Generalizability --- Performance	Intelligibility --- Fidelity --- Pervasiveness --- Impact (extent to which it affects key targets)	Credibility --- Convenience --- Evidential Assessment	Adaptability --- Feasibility --- Action	Effectiveness --- Efficiency ---	Continuity --- Valuation --- Support
RELATION TO CHANGE	Provides basis for invention	Produces the invention	Engineers and packages the invention	Informs about the invention	Builds conviction about the invention	Tries out the invention in the context of a particular situation	Operationalizes the invention for use in a specific institution	Establishes the invention as a part of an ongoing program; converts it to a "non-innovation"

and Clark regard research as a specialized function performed by investigators whose interest is in the development of new knowledge and who are not concerned that the research outcomes will have practical application.

2. Development, where the component activities are invention and design. The task of "development" is to find applications for research products. Again the authors regard this as a specialized function differing from research in that the agent at this point is aware of practical problems requiring solutions. The invention aspect of development calls for the formulation of solutions to action problems. Such solutions may be drawn from research or from experience. The design aspect calls for fashioning the solution into an acceptable and adaptable form. Frequently a field test of the solution is required in order to modify its various aspects with a view to producing a readily marketed product.

3. Diffusion has as its purpose effecting widespread awareness of a particular "invention" and giving its potential consumers an opportunity to examine and assess it. The component tasks of this activity are: (a) dissemination, which attends to making the idea available and readily intelligible to its intended users, and (b) demonstration, which attends to providing tangible evidence that the idea is in fact practical.

4. Adoption refers to the stage at which the idea or invention is incorporated into the operating system of the target group, i.e., a school system. Three activities are included in the adoption stage: (a) Trial of the idea to determine how well it fits into the system; here the purpose is not one of experimentation but rather one of adaptation to the receiving system in terms of its feasibility and the quality of its effect on the overall system. (b) Installation of the idea in the system; this task attends to operationalizing the new idea within the school system and familiarizing staff with the nature of the innovation. (c) Institutionalization which requires that the idea become part of the on-going practice of the school system, that it continue as a practice for a prolonged period of time. It includes aspects of "valuation" and "support" which call forth a dedication to the idea. Such dedication is manifested by an unwillingness to remove the new idea from the system, and by adequate provision of money and staff to maintain the idea as a practical part of the school system. Guba and Clark emphasize the need for recognizing the four distinct tasks inherent in the categories of research, development, diffusion, adoption. The authors do not, however, insist on a smooth sequential development of an idea from research through to adoption. Their chief concern is with the job of closing the gap between research and practice.

2. THE SUPPLY AND DEMAND-ACTIVATED SYSTEM

R. L. Bruce[7] proposed a classification of extension systems into supply- and demand-activated types. He regards extension as a system or part of a system for the transmission and application of research-discovered information. The supply-activated system features a one-way flow of information progressing from research to development to demonstration. The output of research stimulates action at the development level which, in turn, triggers actions at the demonstration level. This system then requires the production of new knowledge through research, and this knowledge is "supplied" to potential consumers. At the conclusion of each substage in its development—e.g., at research, development, or demonstration—a decision may be made to develop the idea further or simply to make the current results available to potential adopters.

The demand-activated system is described by Bruce as "essentially an information-retrieval device." Here the system is activated by an existing problem which requires a solution. Again the three substages of research, development, and demonstration are involved, but they are triggered by the presence of a problem rather than by the discovery of new information.

The Guba-Clark model was criticized by Gideonse[8] for its failure to account for initiatives of different kinds which may take place at any point on the continuum from research through to adoption. He asserted that the Guba-Clark model "unwittingly implies that innovations begin with the findings generated by fundamental research." Gideonse developed an alternative model for educational change in which he stressed the interplay among different sources of initiative for change. He recognized that while research, development,

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[7] Bruce, op. cit.

[8] Hendrik D. Gideonse, "An Output-Oriented Model of Research and Development and Their Relationship to Educational Improvement," in Research and Development Toward the Improvement of Education, eds. Herbert J. Klausmeier and George T. O'Hearn (Madison, Wisconsin, DEMBAR Educational Research Services, 1968) pp. 157-163.

and school operations have distinctively different objectives and outputs, an idea for change may begin at any one point and may influence activity in the other two. He emphasized the importance of attending to the output of each sector. He regarded as essential that the output of each sector be stated in a form which is readily translated for use by the other sectors.

3. THE PERIODS AND CONDITIONS OF COMMUNITY CHANGE

In his attention to the task of describing the change process in school systems, Kreitlow tested a model which he had earlier designed for describing community change.[9] This model (Figure 2) identified four periods through which communities moved before change was implemented. In the change-agent team setting Kreitlow found the community change model inappropriate as a tool for analysis. Its chief defect was in its failure to account for activities within limited time spans. The stages of community change, from a time of ferment, to crisis, to generation or degeneration, and on to a stage of balance, account for gross periods

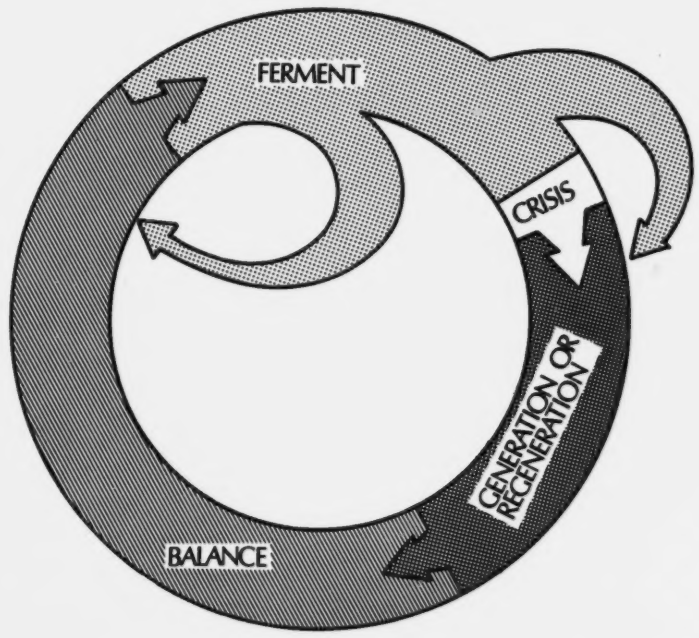

Figure 2. Periods and Conditions of Community Change

(Read in clockwise direction)

when needs are identified and subsequent change implemented. These stages do not account for the intricate decisions and processes through which an innovative idea passes from the time of its discovery to the time of its implementation as a practice.

[9] Kreitlow, op. cit.

III

THE MODEL FOR EDUCATIONAL IMPROVEMENT

On the basis of field exploration and theoretical criticism of the Guba-Clark, Bruce, and Kreitlow models, it was concluded that a more comprehensive and flexible model would be required to appropriately describe the change and improvement process in schools. Kreitlow then proposed a Model for Educational Improvement incorporating the necessary categories within which to chart the change processes in a school system. Included in this Model are key concepts adapted from the Guba-Clark Schema and related ideas from the work of Gideonse and Bruce.

THE MODEL IS BUILT ON VIABLE ASSUMPTIONS

Although the 26,000 school districts in the United States are by no means homogeneous, there are certain characteristics which as districts, all share. If a line or series of lines are drawn to describe the domain of the local district, one important feature emerges which is common to all districts: there is access to the district from the outside. To "build" the Model we start with Figure 3 which shows this access by the opening at the top in the "outer shell" of the district. What moves into the district from the outside (the regional, state, or federal level) is not of consequence at this point. Of consequence here is the access—the access to things beyond the school district social system itself.

Within this outside structure each school district has its distinctive internal structure. School districts are heterogenous. By drawing an internal structure as in Figure 4 we mean only to assume that there is an internal structure in which the processes of educational improvement occur. It should be noted that the new lines drawn in Figure 4 have a number of reference ties to the external structure and are deliberately drawn to show space for movement. Maximum understanding of the model being constructed is gained when it is perceived in a three-dimensional space. Assume that the lines in Figure 3 are the external walls of an open-topped pyramid. The internal walls and some of the passage ways are illustrated in Figure 4.

Figure 3. The Domain of the Local School District

In addition to the assumptions of external and internal structure in school districts is the assumption that each school district has, in one form or another, the social machinery for institutional adjustment. Figure 5 shows the machinery and defines it as an Improvement Module. This module is made up of a working group or groups who have as their purpose the improvement of education in the district. The Improvement Module is the setting for interaction between teachers, administrators, the school board, and citizens of the community, and forms the focal point of the Model for Improvement.

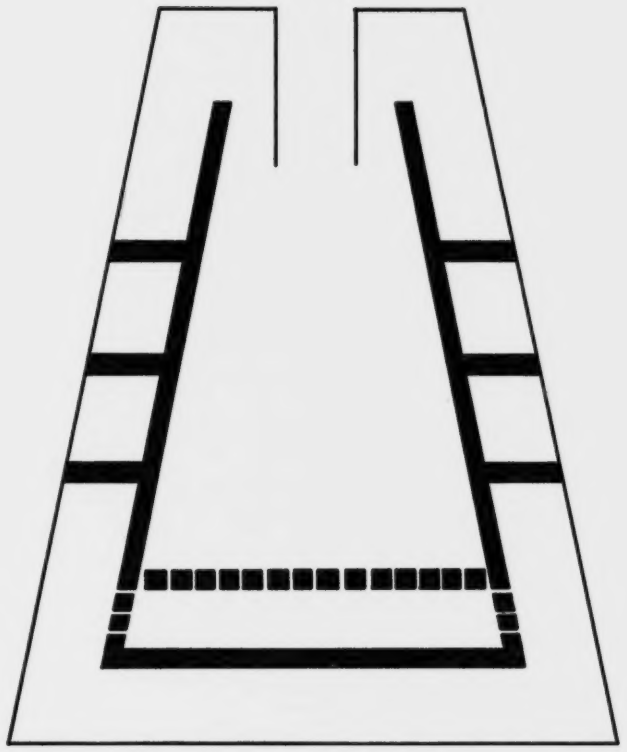

Figure 4. The Internal Structure of a School's Social System

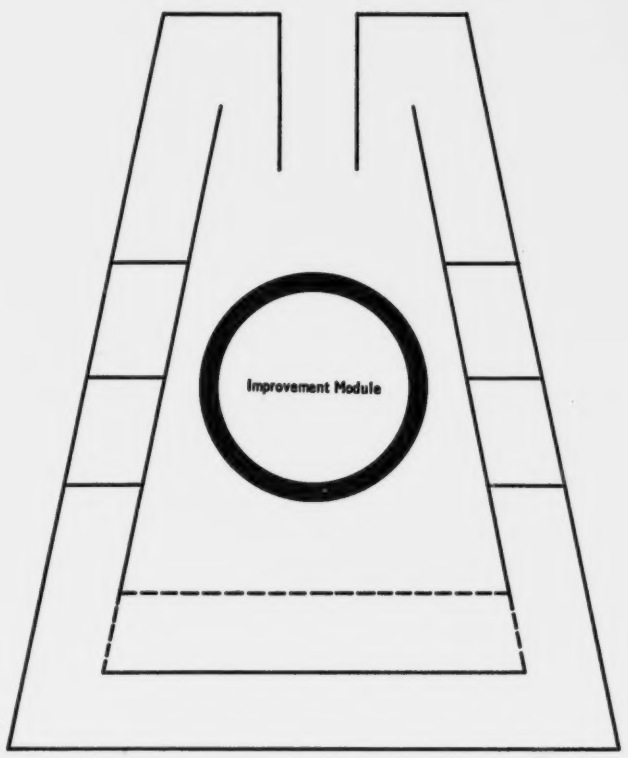

Figure 5. The Improvement Module Within the Social System of the School

In the Wisconsin schools where observations have been made, this structure is called a Change-Agent Team or a Committee for Improvement. In early analyses of data the effectiveness of this module appeared to be related to the potential for interaction among those having assigned roles for improvement in the district.

The central portion of Figure 5 is "blown up" in Figure 6 where the presence of members of the teaching staff, the administration, the board of education, and the community is apparent. It is important that there be a free-flowing exchange and interchange of ideas among groups represented in the Improvement Module if improvement is to be fully realized. Failure to include all key groups will tend to create conflict and, consequently, to block ideas for improvement. With the interaction among those who represent formally or informally these key groups comes the first commitment decision on improvements to be made within the school system. There can be some change and improvement without the interaction that includes all four groups. However, the potential for decision and action in response to need is greater when representatives of the four groups (Region A, Figure 6) take on the improvement responsibility in an organized way. Region B shows a series of two-fold interactions with fewer opportunities for an integrated response to school district needs.

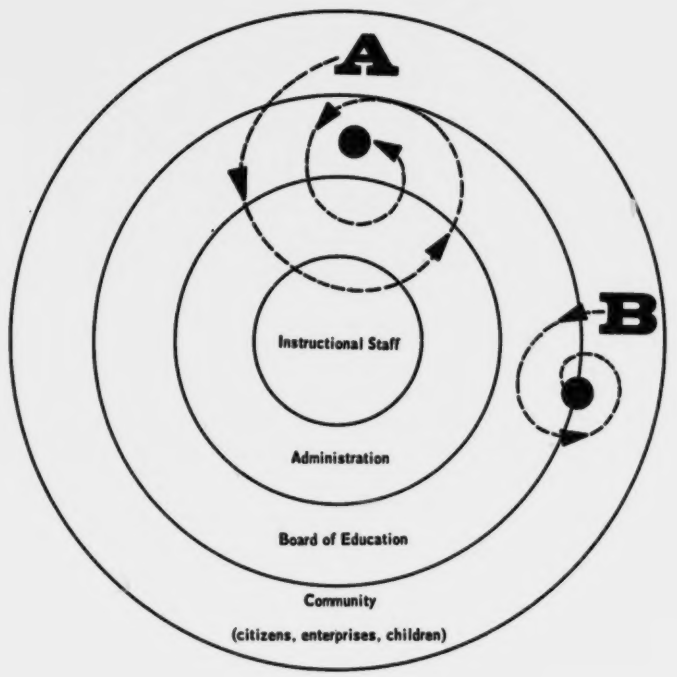

Figure 6. The Improvement Module Showing Key Groups and Patterns of Interaction

Observations in some schools have suggested to the authors that limited improvement comes from limiting the interaction to less than the total number of key groups. In these instances, as noted in Figure 7, there are Mini-Modules without the potential for improvement that a total interaction makes possible. Mini-Modules appear to lead to mini-improvement.

Along with the machinery developed for meeting the needs of the school district is the

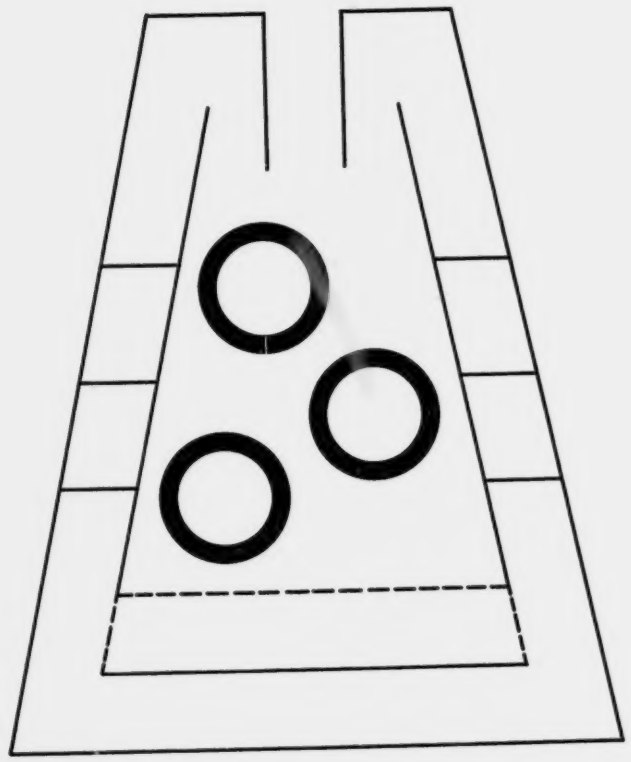

Figure 7. Some Schools Have Mini-Modules for Mini-Improvement

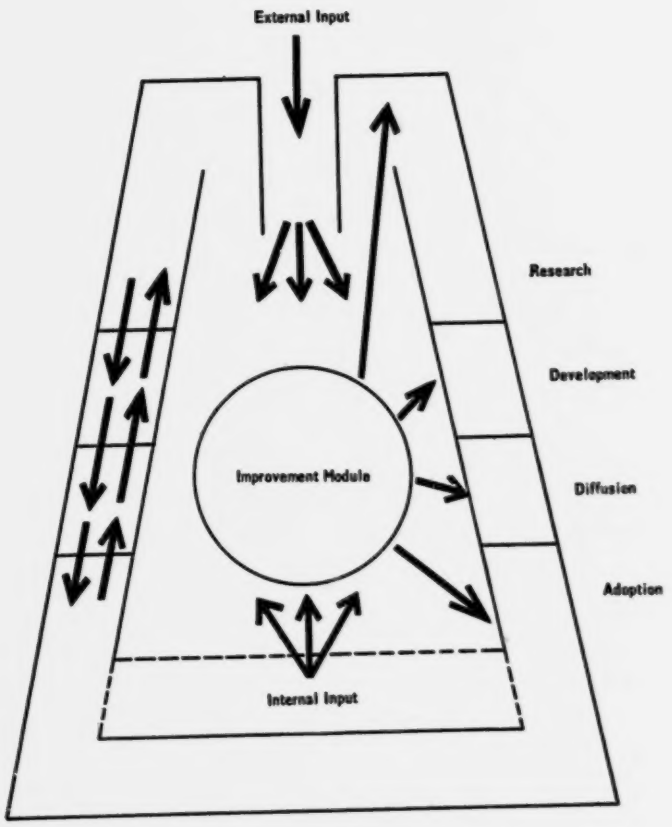

Figure 8. The Potentials for Problem Solution (Direction of Flow)

assumption that there is a process that occurs. The process is a flow from dealing with purposes, problems, and needs to solutions and action. The arrows in Figure 8 show where this flow from problem to solution occurs within the total structure. There are three sets of alternatives. First, the input from either inside or outside the system may or may not be acted upon. If the input moves into the Improvement Module, action is likely. Second, when a commitment decision is made within the Improvement Module and an administrative decision follows, the action taken can be directed to any level—research, development, diffusion, or total adoption. It is not essential for the input to move sequentially from one level to another. Third, when the level for action is chosen it may, as indicated on the left side of Figure 8, move in either direction. For example, where development is chosen, experience may reveal the need for further "in-system" research or the action may be so effective that diffusion and adoption are accomplished in a single second operation.

Figure 9 identifies the final assumption that should be made when a social system is described. Social systems are inefficient. There are places for slippage, places for proposals to stall, places where ideas, however good, get lost in the labyrinth of the social mechanism and fail to be either tried or adopted. In a

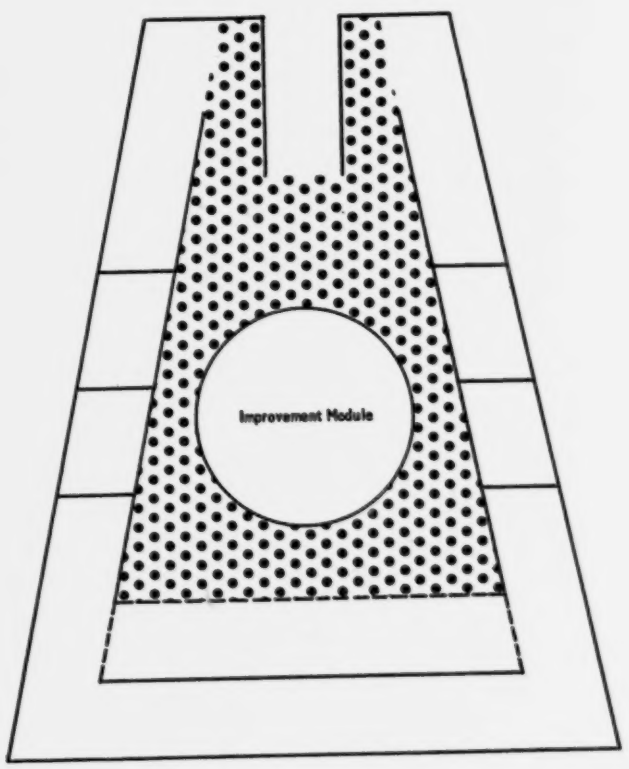

Figure 9. Social Systems Fail to Solve Some Problems

school system without an organization for improvement, the chances for slippage are even greater than Figure 9 would suggest.

IV

TESTING THE MODEL FOR EDUCATIONAL IMPROVEMENT

I. HYPOTHESES

The current task of the Planned Change Project relevant to the Model for Educational Improvement is to test the model for the purpose of either verifying its effectiveness or discovering reasons for modifying it further. In this connection Kreitlow suggested the following hypotheses and questions:

1. The Model for Educational Improvement is a valid description of the change process within a school system.
2. The content identified in tape recordings of change-agent team meetings can be coded according to the stages in the Model for Educational Improvement.
3. There are no differences between newly organized change-agent committees and standing committees taking on the change-agent role in the order of the change process followed by each.
4. For later follow up:
   A. What is the life span of newly adopted practices?
   B. What characteristics of the innovation determine its life span?
   C. In what way is product life span related to:
      1. time from "invention" to "institutionalization?"
      2. type of committee planning the change?
      3. roles of the major contributors to the change?

Observations made in this paper will pertain only to Hypotheses 1 and 2. Work is being continued on Hypothesis 3 and the questions under 4. Results of these will be reported in the final report of the project in 1969.

2. DATA COLLECTION

Change-agent teams were formed in five Wisconsin school systems within the terms of the Planned Change Project. Two of the teams serve as control and three serve as experimental systems. Each of the five teams was asked to submit tape recordings of their meetings to the R & D Center. Additional data were collected on occasional direct observation of change-agent team discussions. The observer, a representative of this project, categorized those discussion items which he deemed relevant to the change process. Categorized reports of observed discussions were filed with categorized summaries compiled from tapes. Tapes were received regularly from change-agent teams between December, 1966, and May, 1968. Some school systems reported more frequently than others and there is a marked difference between the experimental and the control systems in terms of the number of taped reports submitted.

The following summary represents the relative number of meeting reports collected from each of the change-agent teams:

Group	Tapes	Direct Observation	Total
Experimental:			
Number 1	23	1	24
Number 2	8	1	9
Number 3	8	2	10
Control:			
Number 1	5	2	7
Number 2	1	0	1

For the purpose of this paper comment will be confined to data collected from change-agent teams of the experimental group.

3. DATA CATEGORIZING

Categorizations of discussions were made by listening to tape recordings (and on five occasions to live discussions) of change-agent team meetings. Statements relating to ideas for change were transcribed and coded

in terms of categories of the Model for Educational Improvement. It is expected that, over time, statements relating to a particular idea for change will reflect a progression through the stages of the Model. For example, with the initial appearance of an innovative idea, one would expect most statements within the discussion of the idea to fall within the Model categories of research and development. As plans are developed for the idea, one would expect discussion statements to be more heavily focused on the categories of diffusion and adoption.

4. PROFILE OF INFORMATION GAINED FROM DATA

To determine whether there is in fact a systematic order of processes emerging from the work of the change-agent teams, a profile was traced of one problem identified by each team. Coded statements compiled from the taped reports were examined for the purpose of selecting the issue to which each change-agent team devoted most consideration. The following sketch summarizes the progress of the respective ideas in terms of the kinds of concerns voiced by team members and the kind of action proposed. At the end of each profile is a statement of the status of the suggested solutions at the conclusion of the 1967-68 school term.

Experimental School Number 1

Problem Identified: Individual Student Instruction

Date	Nature of Concern	Proposed Action
February 6, 1967	Identified as a need	None
February 20, 1967	Asked how it could be brought about	To find out where this is being done and get some ideas about how it could be handled in this school.
March-Oct., 1967	Topic was not mentioned	
October 28, 1967	That it is a problem about which nothing is being done.	To gather information from as many sources as possible.
November 11, 1967	To clarify definition of independent study	To circulate a questionnaire to aid evaluation of teacher and parent attitudes toward independent study

Status at end of 1967-68 term:

Decision to present description of the concerns of the change-agent team to the presession assembly of staff in August.

Decision to present case for Independent Study to a special meeting of school Administrators in September.

Decision to repeat the announcement of plans for Independent Study in the September Bulletin to the school staff.

Experimental School Number 2

Problem Identified: Concept Teaching

Date	Nature of Concern	Proposed Action
December 14, 1966	Need for emphasis on concepts in teaching of mathematics	None
February 8, 1967	Need for resource persons to help train teachers regarding concept teaching	To have a resource person come to speak at next change-agent meeting.
April 4, 1967	Changes in method of instruction	

Date	Nature of Concern	Proposed Action
	Help students to make decisions	None
May 10, 1967	Topic was not mentioned	
September 30, 1967	Topic was not mentioned	
November 11, 1967	Topic was not mentioned	
December 13, 1967	Topic was not mentioned	
December 8, 1967	Evaluating results of questionnaire	
	Reporting on information gained from literature	
	Considerations of changes in physical facilities which will be required.	To inquire about instructional media laboratory requirements.
January 23, 1968	That independent study was not included in Title III proposal	To include materials regarding independent study in future training sessions (R & D).
		To select a group of teachers and administrators to involve in initiating independent study.
January 31, 1968	Selection of three pilot schools for training design	To attend a conference in Milwaukee regarding individual instruction.
February 6, 1968	Topic was not mentioned	
February 21, 1968	Topic was not mentioned	
March 18, 1968	Topic was not mentioned	
April 8, 1968	Definition of what is meant by independent study	To compile the suggestions received from teachers.
	Plan for implementing a program of independent study	To decide what materials will be required.
	When will independent study be implemented?	To meet with librarians to discuss this matter.
	Need teacher-training program	
	Need consultant	
	Need demonstration	
	Need to look at places where they are doing independent study	
	Should set out new libraries up now as resource materials centers	
Status at end of 1967-68 Term:	No mention of concept teaching was made since the April meeting. Composition of the change-agent team was revised and training sessions for the reorganized team are to be held in August.	

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Experimental School Number 3

Problem Identified: Development of a Nongraded School

Date	Nature of Concern	Proposed Action
February, 1967	To pursue subject of the non-graded school by getting information from others	To open lines of communication between staff, students, and change-agent team.
May, 1967	To regroup grades in elementary schools	To gain approval from community.
Sept., 1967 (two meetings)	Topic was not mentioned	
November, 1967	To restate the philosophy of school system	To have board and faculty agree on philosophy, goals, and means.

Status at end of 1967-68 Term: Decision was made to establish a nongraded reading program in one of the elementary schools. Physical facilities to be changed in the school building during summer to allow for development of research centers to enhance the nongraded reading program.

A review of the above profiles would lead one to conclude that there is continuity in the development of the selected ideas. The team in School Number 1 is apparently pursuing its issues with greater vigor than are, so far, those in Schools 2 and 3.

V

RELATING THE EXAMPLE OF SCHOOL NUMBER I TO THE MODEL FOR EDUCATIONAL IMPROVEMENT

The initial idea—to introduce a program of individualized instruction to the school system—was an internal input, possibly originating within the change-agent team. However, since the exact source was not identified, the idea may have originated with a teachers' group in which a change-agent team member participated. The idea remained within the improvement module while the change-agent team engaged in a general inquiry about the meaning and implications of a program of individualized instruction. At this point the team "demanded" information from sources outside the system. The outcome of this activity was to establish an awareness of some of the problems associated with the possible implementation of the idea; i.e., the need for consultant services, for inservice training programs for teachers, for instructional materials centers in schools. No explanation was derived from the taped discussions to account for the fact that the idea was not mentioned during seven subsequent meetings.

The idea was revived by members of the change-agent team who requested suggestions from a representative of the R and D Center about how the team might further pursue its interest in individualized instruction. The consequent external input was, again, demand-activated and took the form of suggestions about further fact-finding measures the team might follow.

The idea remained within the module until the team formulated a clear definition of what was meant by "individualized instruction." A questionnaire was constructed and administered by the team in order to gain information about how others in the system reacted to the idea. Although the investigators have no record of the actual decision to incorporate individualized instruction into the school system, such a decision was apparently reached. The idea moved to the Diffusion Stage of the Improvement Model. Plans were made by the team to have materials regarding independent study incorporated into the training program for teachers conducted by the R and D Center; to bring information about individualized instruction to school administrators; to make announcements about individualized instruction in the School Bulletin. Discussions at recent meetings of the change-agent team appear to be leading to further measures for demonstrating the idea with a view to entering the trial and installation phases of the Adoption Stage.

To summarize the above example as it relates to the Model for Educational Improvement, there is not a sharply defined progression of the idea though sequential stages from research through adoption. Instead, such processes as information gathering and development of the idea were carried on within the Improvement Module. The circulation of a questionnaire served chiefly as information gathering but it also served to bring the idea temporarily to the Diffusion Stage by creating a general awareness of the proposal. Later the idea moved directly from the Module to the Diffusion Stage. There are indications that it will proceed to the Adoption Stage.

At this point in our observations an example of a single school system does not account for the operationalization of all the stages in the Model for Educational Improvement. However, observation of the change process in a number of systems enables one to view the operation of other stages of the Model. Figure 10 represents an attempt to place in a single drawing both the structure and process built up in the previous figures. It is a composite of all the Model stages. A few additional words are added to the model, words not used on previous figures. This is done to bring closure to the entire concept. The base of the pyramid includes the philosophy, values, and traditions of the institutions. Both an external and internal input to the Improvement Module are listed and are identifed as being "supply" or "demand"

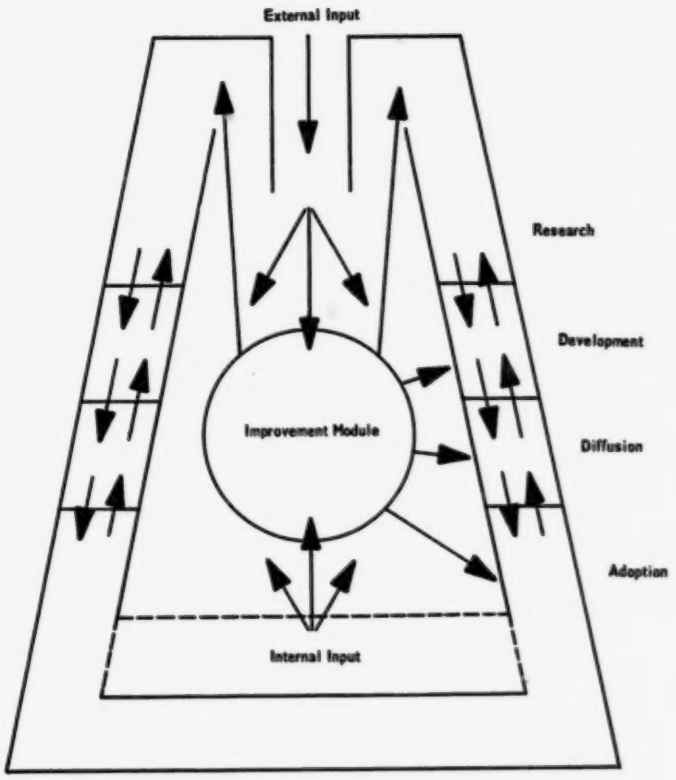

Figure 10. Model for Educational Improvement

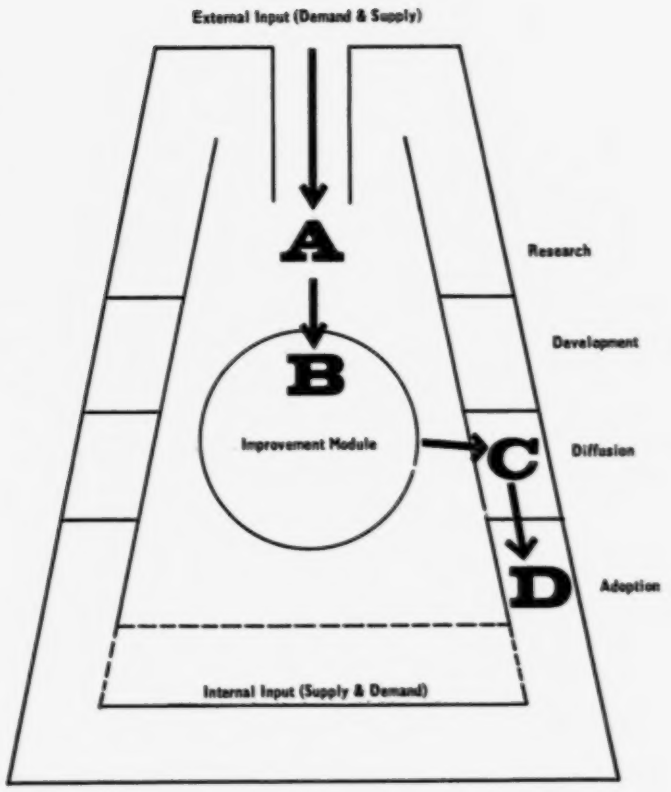

Figure 11. Flow of an External Input to Adoption

oriented. The use of supply and demand in this context is to indicate whether the solution to a problem is deliberately sought (demand) or whether it is deliberately provided (supply). Thus with the total Model as in Figure 10, it becomes possible to trace problems or proposals through the system. This is true whether they are internal or external inputs.

Figure 11 is an example of the flow of one such external input (supply oriented). In this instance a professional section of the State Department of Public Instruction believed that School District Number 1 would be improved if it contracted jointly with a neighboring district to hire a school social worker on a half-time basis. The State Department representative said to District Number 1, "Our broad experience with districts like yours tells us you can solve some of your recurring problems and improve your school by employing a half-time social worker." This idea supplied without being requested got into the school system at Point A. This could have been the last of it, but in this instance the administrator asked its Committee on Improvement to consider the idea. Point B identifies this entry into the Improvement Module. After considerable discussion and consideration it could have been dropped or acted upon. In this instance Point C in Figure 11 indicates that a commitment decision and recommendation was made, that acceptance was given by the proper administrative authority to diffuse the concept into the system to acquaint the teaching staff with its potential. At Point D the determination was made to adopt the idea and put it into practice. Whether it be on a trial basis the following year or a complete installation of the position into the system, it would require formal decisions related to budget, materials, space, and a host of minor items. Most of the latter decisions are administrative and beyond the realm of the Improvement Model.

An example of an internal input for School District Number 1 is shown in Figure 12. Beginning near the bottom of the model at Point A a teacher brought a major reading problem in her fifth-grade class to the attention of her principal and ultimately to the Committee on Improvement. In this case the teacher had a problem and she wanted an answer (demand). As in Figure 11 there was no guarantee that any consideration would be given to the teacher's question. In this case preliminary discussion of the problem led to a conviction that a problem existed in reading in the total elementary school program. The problem raised by the teacher became a problem for study and interaction within the Improvement Module, Point B. A search for solutions was made by the committee and help was sought from many sources. In the process, information on a nongraded reading program was studied and special committees were established to determine whether or not a nongraded program was appropriate for

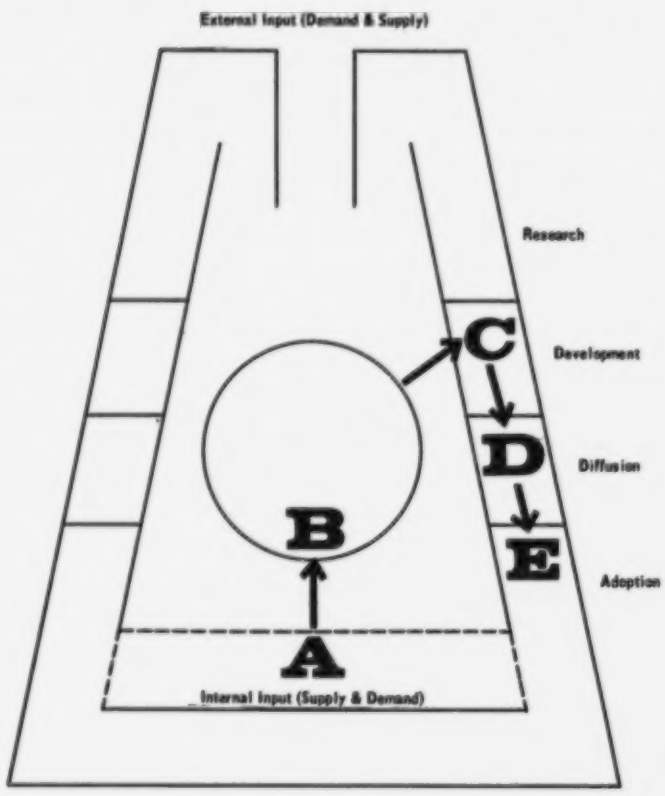

Figure 12. Flow of an Internal Input to Adoption

School District Number 1. At one point in the discussion it was suggested that the system establish its own research program to test out a nongraded reading program. Later information received from a Research and Development Center (External Input on the basis of demand) convinced the committee that a nongraded program would work if carefully developed to meet the special characteristics of the children in School District Number 1. On this basis the Committee on Improvement proposed and received administrative sanction to develop (Point C) the nongraded concept of reading in the lower grades in 1968-1969; if it worked well, to diffuse it through the system as soon as possible (Point D); and, if successful, to effect full adoption (Point E).

VI

A GENERAL IMPRESSION

Examination of statements isolated from recordings of change-agent team discussions reveals a more disjointed pattern of change than the above profiles would indicate. Many ideas are explored by the change-agent teams. Often these ideas are dropped for no apparent reason after being discussed enthusiastically and at length. A problem here might be that decisions are made outside the regular formal change-agent meetings and are not, therefore, discernable from the taped accounts.

At this point in the investigation there is at least a small amount of evidence to support Hypotheses 1 and 2: the Model for Educational Improvement is a valid description of the change process within a school system; the content identified in taped records of change-agent team meetings can be coded according to the stages in the Model for Educational Improvement. The investigators are aware of such circumstances as changes in the member composition of the teams at Schools 2 and 3 which might account in large measure for relative inaction as compared with progress made by the team at School 1. On the basis of this fact, and the additional likelihood that all developments are not reported, the following interim and tentative conclusions are made:

1. That there is a systematic development in the change process for school systems.
2. That the Model for Educational Improvement is a suitable instrument for describing development of the change process.
3. That, at present, data received are insufficient to form a basis for firm conclusions with respect to the hypotheses of this study.
4. That the change-agent teams under study are not yet fully committed to a role wherein they are responsible for diagnosing problems, planning action, transforming strategy into action, and evaluating action results.

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